



FORM PTO-1449 (modified)  
U.S. Department of Commerce  
U.S. Patent & Trademark Office

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date: March 12, 2010

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Attorney Reference: 011948-0045-999

Applicant: Paul Deane

Application Serial No. 10/822,426

Filing Date: April 12, 2004

Examiner: Nikolai A. Gishnock

Group Art Unit: 3715

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

AR	Beale, S., et al., <i>De-Constraining Text Generation</i> , In Proceedings of the Ninth International Workshop on Natural Language Generation, 1998, 10 pages.
BR	Bejar, I. I., <i>A Generative Approach to the Development of Hidden Figure Items</i> , Research Report No. RR-86-20-ONR, June 1986, 43 pages, Office of Naval Research.
CR	Bejar, I. I., <i>A Generative Approach to Psychological and Educational Measurement</i> , in Test Theory for a New Generation of Tests, Frederickson, Misley and Bejar (Eds.), 1993, pp. 323-359.
DR	Bejar, I. I., <i>Generative Response Modeling: Leveraging the Computer as a Test Delivery Medium</i> , Research Report No. ETS-RR-96-13, April 1996, 44 pages, Educational Testing Service.
ER	Bejar, I. I., <i>Generative Testing: From Conception to Implementation</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 199-208.
FR	Bejar, I., et al., <i>A Generative Approach to the Modeling of Isomorphic Hidden-Figure Items</i> , Applied Psychological Measurement, June 1991, Vol. 15, No. 2, pp. 129-137.
GR	Bennett, R.E., <i>An Electronic Infrastructure for a Future Generation of Tests</i> , in Technology Applications in Education: A Learning View, O'Neil and Perez (Eds.), 2003, pp. 267-281.
HR	Brown, J.S., et al., <i>Diagnostic Models for Procedural Bugs in Basic Mathematical Skills</i> , Cognitive Science, Vol. 2, 1978, pp. 155-192.
IR	Cahill, L., et al., <i>In Search of a Reference Architecture for NLG Systems</i> , Information Technology Research Institute Technical Report No. ITRI-99-23, December 1999, 10 pages.
JR	Cahill, L., et al., <i>Component Tasks in Applied NLG Systems</i> , Information Technology Research Institute Technical Report No. ITRI-99-05, March 1999, 25 pages.
KR	Dennis, I., et al., <i>Approaches to Modeling Item-Generative Tests</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 53-71.
LR	Embretson, S.E., <i>Psychometric Models for Learning and Cognitive Processes</i> , in Test Theory for a New Generation of Tests, Frederickson, Misley and Bejar (Eds.), 1993, pp. 125-150.
MR	Embretson, S.E., <i>A Cognitive Design System Approach to Generating Valid Tests: Application to Abstract Reasoning</i> , Psychological Methods, Vol. 3, 1998, pp. 380-396.
NR	Embretson, S.E., <i>Generating Items During Testing: Psychometric Issues and Models</i> , Psychometrika, Vol. 64, December 1999, pp. 407-433.
OR	Embretson, S.E., <i>Generating Abstract Reasoning Items with Cognitive Theory</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 219-250.
PR	Enright, M.K., et al., <i>Items By Design: The Impact of Systematic Feature Variation on Item Statistical Characteristics</i> , GRE Board Research Report No. 99-15-R, September 1999, 38 pages.
QR	Enright, M.K., et al., <i>Modeling the Difficulty of Quantitative Reasoning Items: Implications for Item Generation</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 129-157.
RR	Fillmore, C.J., <i>The Case for Case</i> , in Universals in Linguistic Theory, Bach and Harms (Eds.), 1968, pp. 1-88.

Examiner /Nikolai Gishnock/

Date Considered: 06/05/2010

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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SR	Fillmore, C.J., <i>Frame Semantics and the Nature of Language</i> , in Annals of the New York Academy of Sciences: Conference on the Origin and Development of Language and Speech, 1976, Vol. 280, pp. 20-32.
TR	Fillmore, C.J., <i>Scenes-and-Frames Semantics</i> , in Fundamental Studies in Computer Science, Zampolli (Ed.), Vol. No. 59, 1977, pp. 55-81.
UR	Fillmore, C.J., <i>The Need for a Frame Semantics Within Linguistics</i> , Statistical Methods in Linguistics, Vol. 12, 1976, pp. 5-29.
VR	Fillmore, C.J., <i>Frame Semantics</i> , in Linguistics in the Morning Calm, The Linguistic Society of Korea (Ed.), 1982, pp. 111-137.
WR	Fillmore, C.J., <i>Frames and the Semantics of Understanding</i> , Quaderni di Semantica, 1985, Vol. 6, No. 2, pp. 222-254.
XR	Fillmore, C.J., et al., <i>Starting Where the Dictionaries Stop: The Challenge of Corpus Lexicography</i> , in Computational Approaches to the Lexicon, Atkins and Zampolli (Eds.), 1994, pp. 349-393.
YR	Mental Models, Gentner and Stevens (Eds.), Lawrence Erlbaum Associates, (Table of Contents), 1983, 5 pages.
ZR	Gildea, D., et al., <i>Automatic Labeling of Semantic Roles</i> , Computational Linguistics, 2002, Vol. 28, No. 3, 54 pages.
AAR	Task Variables in Mathematical Problem Solving. Goldin and McClintock (Eds.), Franklin Institute Press, (Table of Contents), 1984, 6 pages.
BBR	Hall, R., et al., <i>Exploring the Episodic Structure of Algebra Story Problem Solving</i> , Cognition and Instruction, 1989, Vol. 6, No. 3, pp. 223-283.
CCR	Hinsley, D.A., et al., <i>From Words to Equations Meaning and Representation in Algebra Word Problems</i> , in Cognitive Processes in Comprehension, Lawrence Erlbaum Associates, 1977, pp. 89-96.
DDR	Hively, II, W., et al., <i>A "Universe-Defined" System of Arithmetic Achievement Tests</i> , Journal of Educational Measurement, 1968, Volume 5, No. 4, pp. 275-290.
EER	Hombo, C.M., et al., <i>A Simulation Study of the Impact of Automatic Item Generation under NAEP-Like Data Conditions</i> , presented at the Annual Meeting of the National Council on Measurement, April 2001, 40 pages.
FFR	Irvine, S.H., et al., <i>Towards a Theory of Algorithm-Determined Cognitive Test Construction</i> , British Journal of Psychology, 1990, Vol. 81, pp. 173-195.
GGR	Item Generation for Test Development, Irvine and Kyllonen (Eds.), Lawrence Erlbaum Associates, (Table of Contents), 2002, 5 pages.
HIR	Johnson-Laird, P.N., Mental Models, Cognitive Science Series, (Table of Contents), 1983, 2 pages.
IIR	Johnson, C.R., et al., <i>The FrameNet Tagset for Frame-Semantic and Syntactic Coding of Predicate-Argument Structure</i> , Proceedings of the 1 <sup>st</sup> Meeting of the North American Chapter of the Association for Computational Linguistics (ANLP-NAACL 2000), 2000, pp. 56-62.
JJR	Kyllonen, P., <i>Item Generation for Repeated Testing of Human Performance</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 251-276.
KKR	LaDuca, A., et al., <i>Item Modelling Procedure for Constructing Content-Equivalent Multiple Choice Questions</i> , Medical Education, 1986, Vol. 20, pp. 53-56.
LLR	Schemas in Problem Solving, Marshall, S.P., Cambridge University Press, (Table of Contents), 1995, 3 pages.
MMR	Mayer, R.E., <i>Frequency Norms and Structural Analysis of Algebra Story Problems into Families, Categories, and Templates</i> , Instructional Science, 1981, Vol. 10, pp. 135-175.

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NNR	Mayer, R.E., <i>Memory for Algebra Story Problems</i> , Journal of Educational Psychology, 1982, Vol. 74, No. 2, pp. 199-216.
OOR	McArthur, D., et al., <i>Learning Problem-Solving Skills in Algebra</i> , Journal of Educational Technology Systems, 1986-1987, Vol. 15, No. 3, pp. 303-324.
PPR	Meisner, R. M., et al., <i>The Comparability of the Statistical Characteristics of Test Items Generated by Computer Algorithms</i> , ACT Research Report Series No. 93-9, December 1993, 28 pages.
QQR	Minsky, M., <i>A Framework for Representing Knowledge</i> , Artificial Intelligence Memo No. 306, in The Psychology of Computer Vision, McGraw-Hill, June 1974, pp. 211-277.
RRR	Mislevy, R. J., et al., <i>On the Roles of Task Model Variables in Assessment Design</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 97-128.
SSR	Nathan, M. J., et al., <i>A Theory of Algebra-Word-Problem Comprehension and Its Implications for the Design of Learning Environments</i> , Cognition and Instruction, 1992, Vol. 9, No. 4, pp. 329-389.
TTR	Newstead, S., et al., <i>Using the Psychology of Reasoning to Predict the Difficulty of Analytical Reasoning Problems</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 35-51.
UUR	Paige, J. M., et al., <i>Cognitive Processes in Solving Algebra Word Problems</i> , in Problem Solving: Research, Method and Theory, Kleinmütz (Ed.), 1966, pp. 51-119.
VVR	Paiva, D.S., <i>A Survey of Applied Natural Language Generation Systems</i> , Information Technology Research Institute Technical Report Series (ITRI-98-03), July 1998, 56 pages.
WWR	Pianta, E., et al., <i>Mixing Representation Levels: The Hybrid Approach to Automatic Text Generation</i> , Proceedings of AISB'99 Workshop, July 1999, 6 pages.
XXR	Reed, S.K., <i>A Structure-Mapping Model for Word Problems</i> , Journal of Experimental Psychology: Learning, Memory and Cognition, 1987, Vol. 13, No. 1, pp. 124-139.
YYR	Reed, S.K., et al., <i>Selecting Analogous Problems: Similarity Versus Inclusiveness</i> , Memory and Cognition, 1990, Vol. 18, No. 1, pp. 83-98.
ZZR	Reed, S.K., et al., <i>Usefulness of Analogous Solutions for Solving Algebra Word Problems</i> , Journal of Experimental Psychology: Learning, Memory, and Cognition, 1985, Vol. 11, No. 1, pp. 106-125.
AAAR	Reiter, E., <i>NLG vs. Templates</i> , Proceedings of the Fifth European Workshop on Natural Language Generation, 1995, 11 pages.
BBBR	Reiter, E., et al., <i>Building Applied Natural Language Generation Systems</i> , Natural Language Engineering, Vol. 3, No. 1, 1997, 32 pages.
CCCR	Riley, M.S., et al., <i>Development of Children's Problem-Solving Ability in Arithmetic</i> , in The Development of Mathematical Thinking, Ginsburg (Ed.), Academic Press, Inc., 1983, pp. 153-196.
DDOR	Ruppenhofer, J., et al., <i>Collocational Information in the FrameNet Database</i> , Proceedings of the Tenth Euralcx International Congress, 2002, Vol. 1, 11 pages.
EEER	Scripts, Plans, Goals and Understanding, An Inquiry into Human Knowledge Structure, Schank, R.C., et al., Lawrence Erlbaum Associates, (Table of Contents), 1977, 5 pages.
FFFR	Sebrechts, M. M., et al., <i>Using Algebra Word Problems to Assess Quantitative Ability: Attributes, Strategies, and Errors</i> , Cognition and Instruction, 1996, Vol. 14, No. 3, pp. 285-343.

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GGGR	Sheehan, K.M., et. al., <i>A Partially Automated System for Generating Passage-Based Multiple-Choice Verbal Reasoning Items</i> , presented at the National Council on Measurement in Education Annual Meeting, April 1, 2003, 51 pages.
HHHR	Silver, E.A., <i>Student Perceptions of Relatedness Among Mathematical Verbal Problems</i> , Journal for Research in Mathematics Education, May 1979, Vol. 10, No. 3, pp. 195-210.
IIIR	Singley, M.K., et al., <i>Promoting Abstract Strategies in Algebra Word Problem Solving</i> , Cognition Science, Proceedings of the International Conference of the Learning Sciences, March 1990, 8 pages.
JJJR	Sweller, J., et al., <i>Development of Expertise in Mathematical Problem Solving</i> , Journal of Experimental Psychology: General, 1983, Vol. 112, No. 4, pp. 639-661.
KKKR	Weaver, III, C.A., et al., <i>Enhancing Students' Comprehension of the Conceptual Structure of Algebra Word Problems</i> , Journal of Educational Psychology, 1992, Vol. 84, No. 4, pp. 419-428.
LLLR	Wright, D., <i>Scoring Tests When Items Have Been Generated</i> , in Item Generation for Test Development, Irvine and Kyllonen (Eds.), 2002, pp. 277-286.
MMMR	
NNNR	
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**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
FFFF	6,000,945	12/1999	Sanchez-Lazer, et al.			
GGGG	6,259,890	07/2001	Driscoll, et al.			
HHHH	6,442,370	08/2002	Driscoll, et al.			
IIII	09/654,949		Brittingham, et al. (unpublished application)			09/01/2000
JJJJ						
KKKK						
LLLL						
MMMM						
NNNN						
OOOO						
PPPP						

**FOREIGN PATENT DOCUMENTS**

Document Number	Date MM/YYYY	Country	Translation Readily Available	English Abstract
QQQQ			Enclosed	No
RRRR			Enclosed	No
SSSS			Enclosed	No
TTTT			Enclosed	No
UUUU			Enclosed	No
VVVV			Enclosed	No
WWWW			Enclosed	No
XXXX			Enclosed	No
YYYY			Enclosed	No
ZZZZ			Enclosed	No

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